FIG. 1

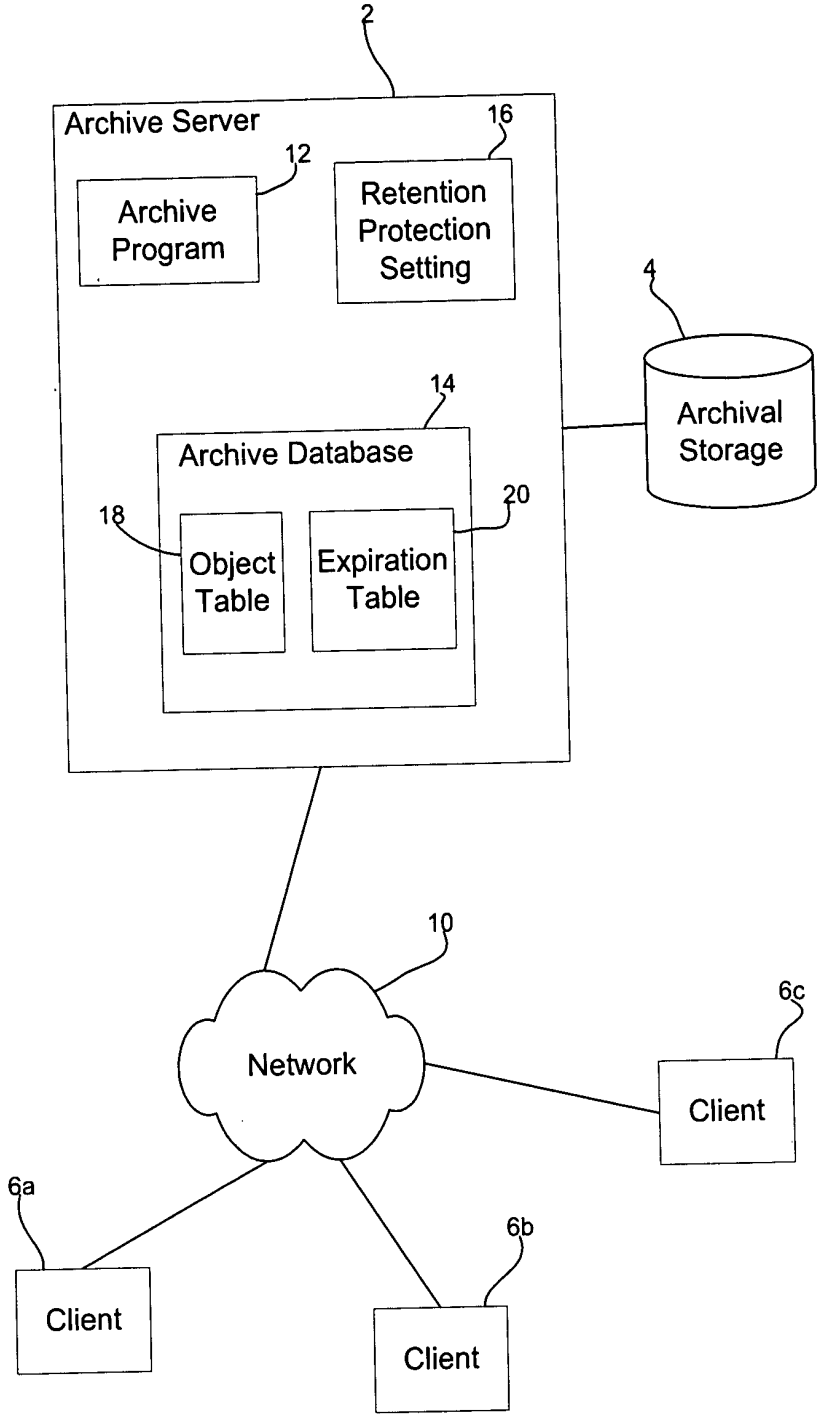
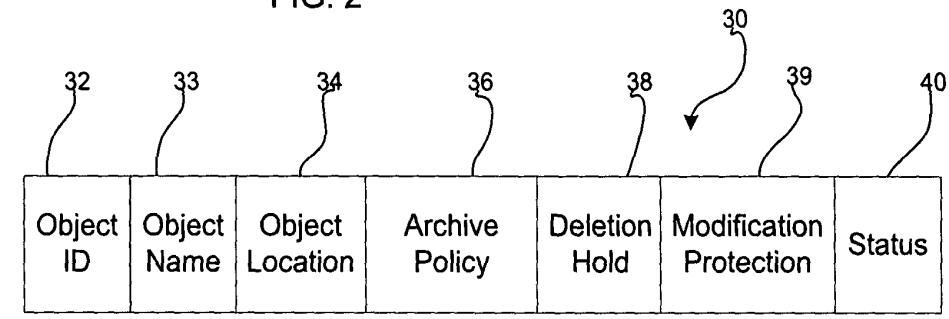
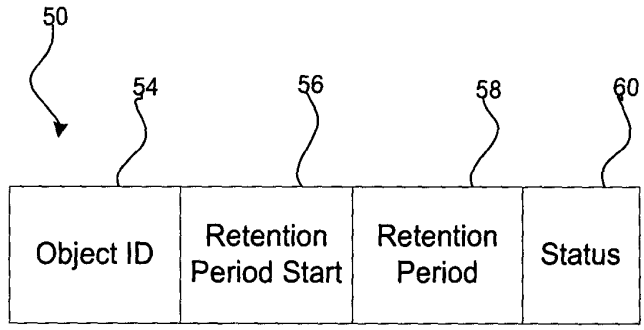

2
Archive Server
16
12
Archive Program
Retention Protection Setting
4
Archival Storage
14
Archive Database
18
20
Object Table
Expiration Table
10
Network
6c
Client
6a
Client
6b
Client

FIG. 2



Object Entry

FIG. 3



Expiration Entry

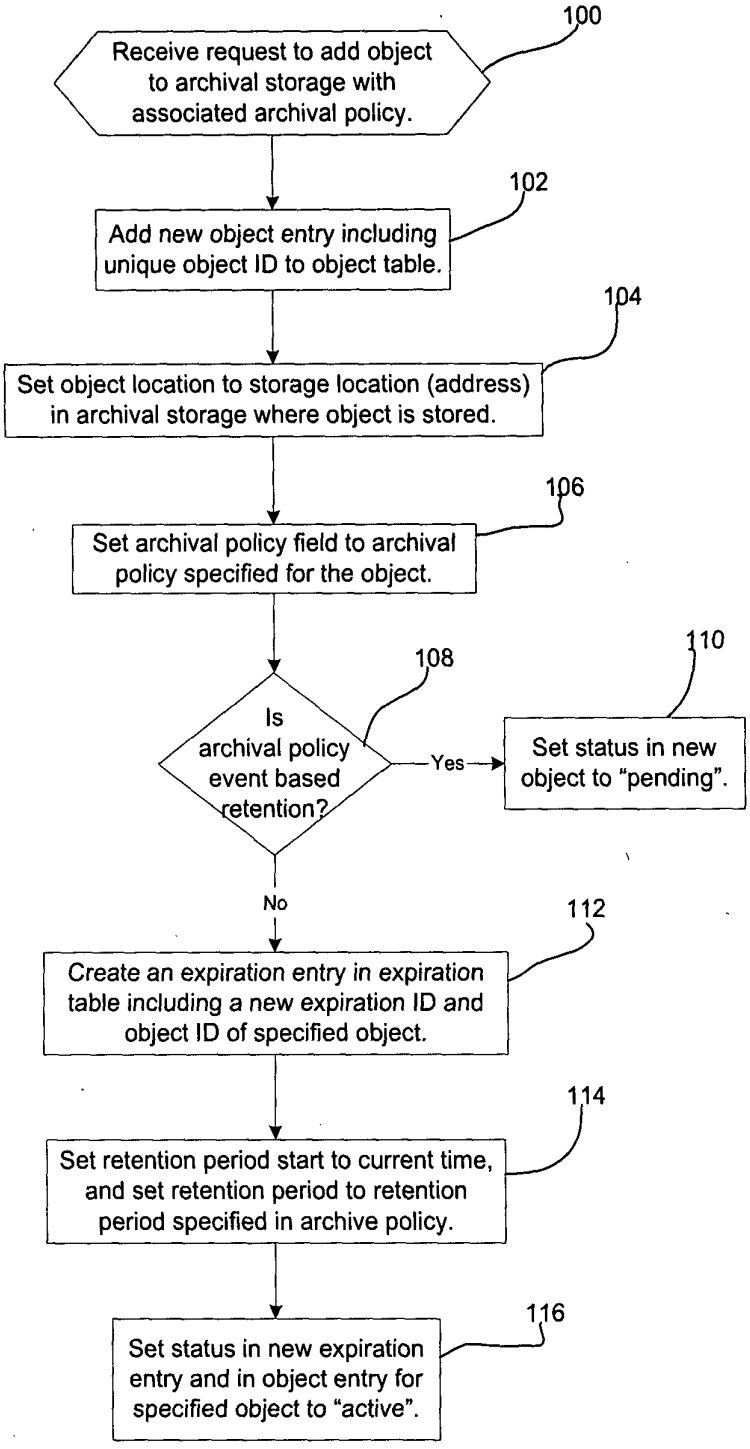

100
Receive request to add object to archival storage with associated archival policy.
102
Add new object entry including unique object ID to object table.
104
Set object location to storage location (address) in archival storage where object is stored.
106
Set archival policy field to archival policy specified for the object.
108
Is archival policy event based retention?
Yes
110
Set status in new object to "pending".
No
112
Create an expiration entry in expiration table including a new expiration ID and object ID of specified object.
114
Set retention period start to current time, and set retention period to retention period specified in archive policy.
116
Set status in new expiration entry and in object entry for specified object to "active".

FIG. 4

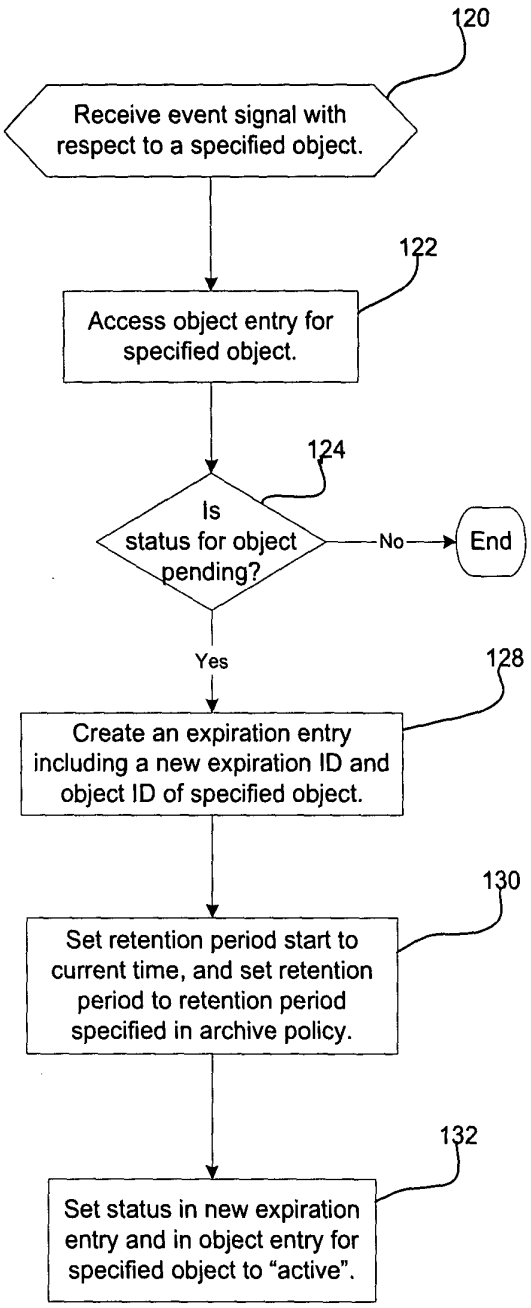

120
Receive event signal with respect to a specified object.
122
Access object entry for specified object.
124
Is status for object pending?
No
End
Yes
128
Create an expiration entry including a new expiration ID and object ID of specified object.
130
Set retention period start to current time, and set retention period to retention period specified in archive policy.
132
Set status in new expiration entry and in object entry for specified object to "active".

FIG. 5

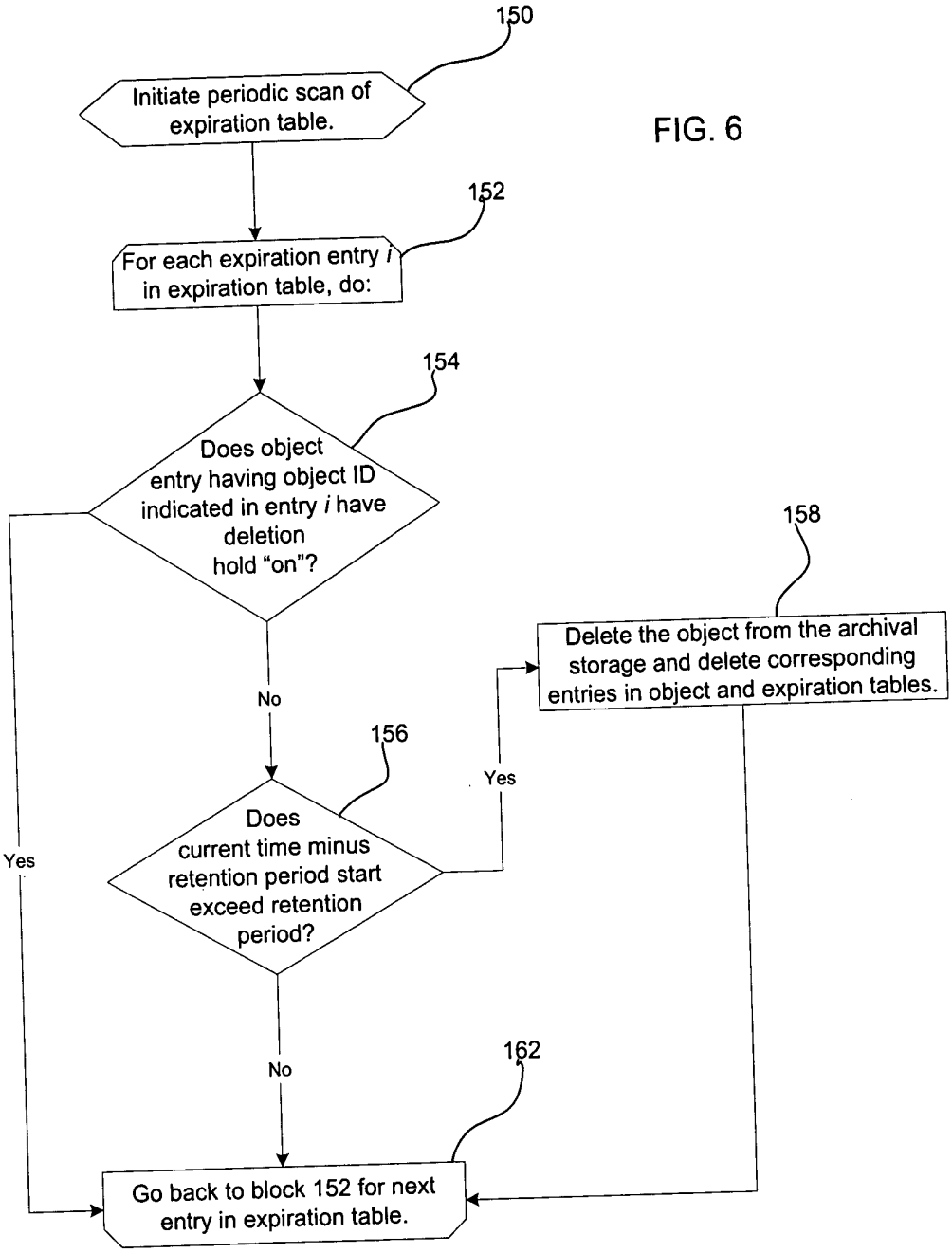
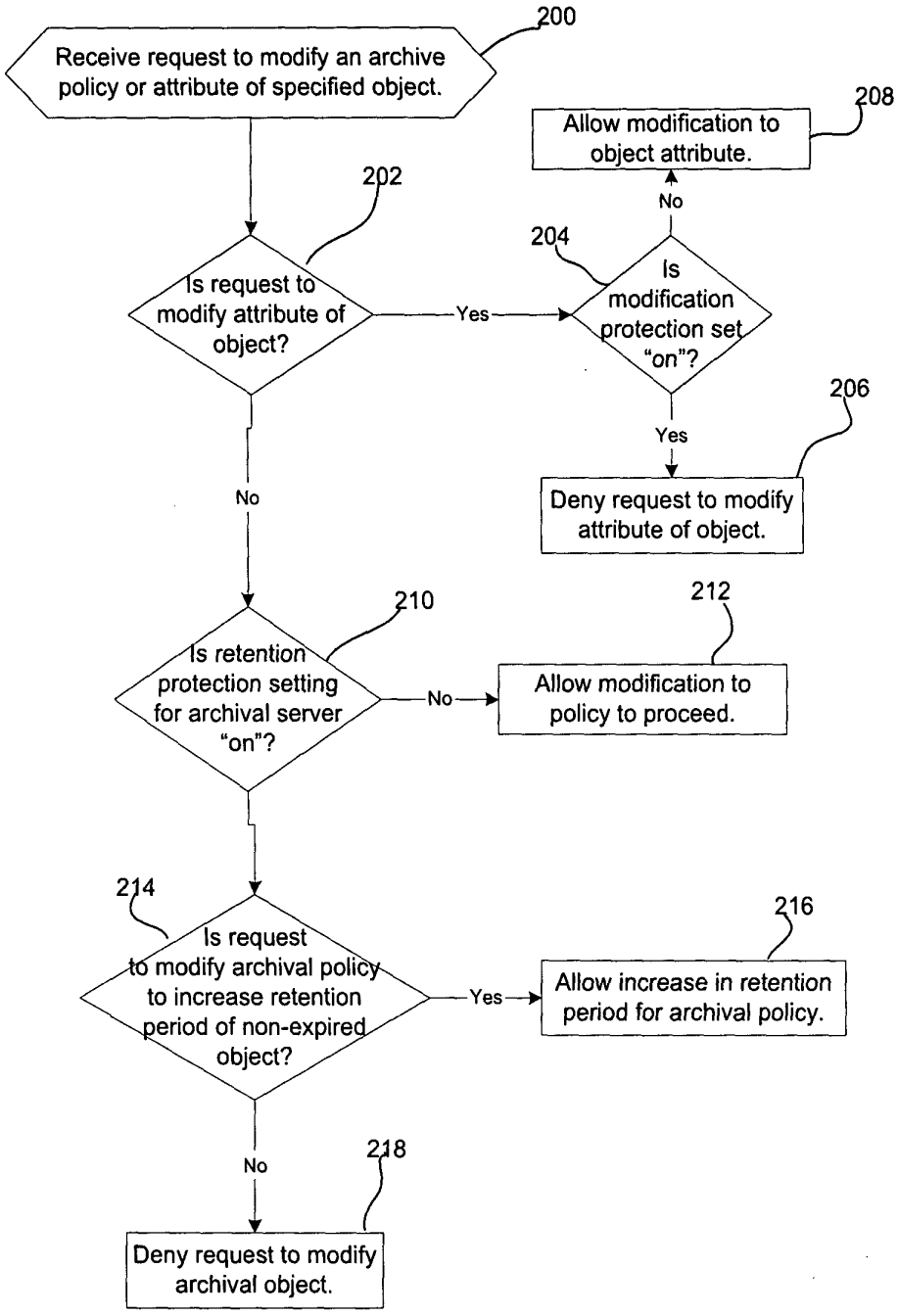

150
Initiate periodic scan of expiration table.
152
For each expiration entry *i* in expiration table, do:
154
Does object entry having object ID indicated in entry *i* have deletion hold "on"?
No
Yes
156
Does current time minus retention period start exceed retention period?
Yes
No
158
Delete the object from the archival storage and delete corresponding entries in object and expiration tables.
162
Go back to block 152 for next entry in expiration table.

FIG. 6

FIG. 7


200
Receive request to modify an archive policy or attribute of specified object.
202
Is request to modify attribute of object?
Yes
204
Is modification protection set "on"?
No
208
Allow modification to object attribute.
Yes
206
Deny request to modify attribute of object.
No
210
Is retention protection setting for archival server "on"?
No
212
Allow modification to policy to proceed.
214
Is request to modify archival policy to increase retention period of non-expired object?
Yes
216
Allow increase in retention period for archival policy.
No
218
Deny request to modify archival object.

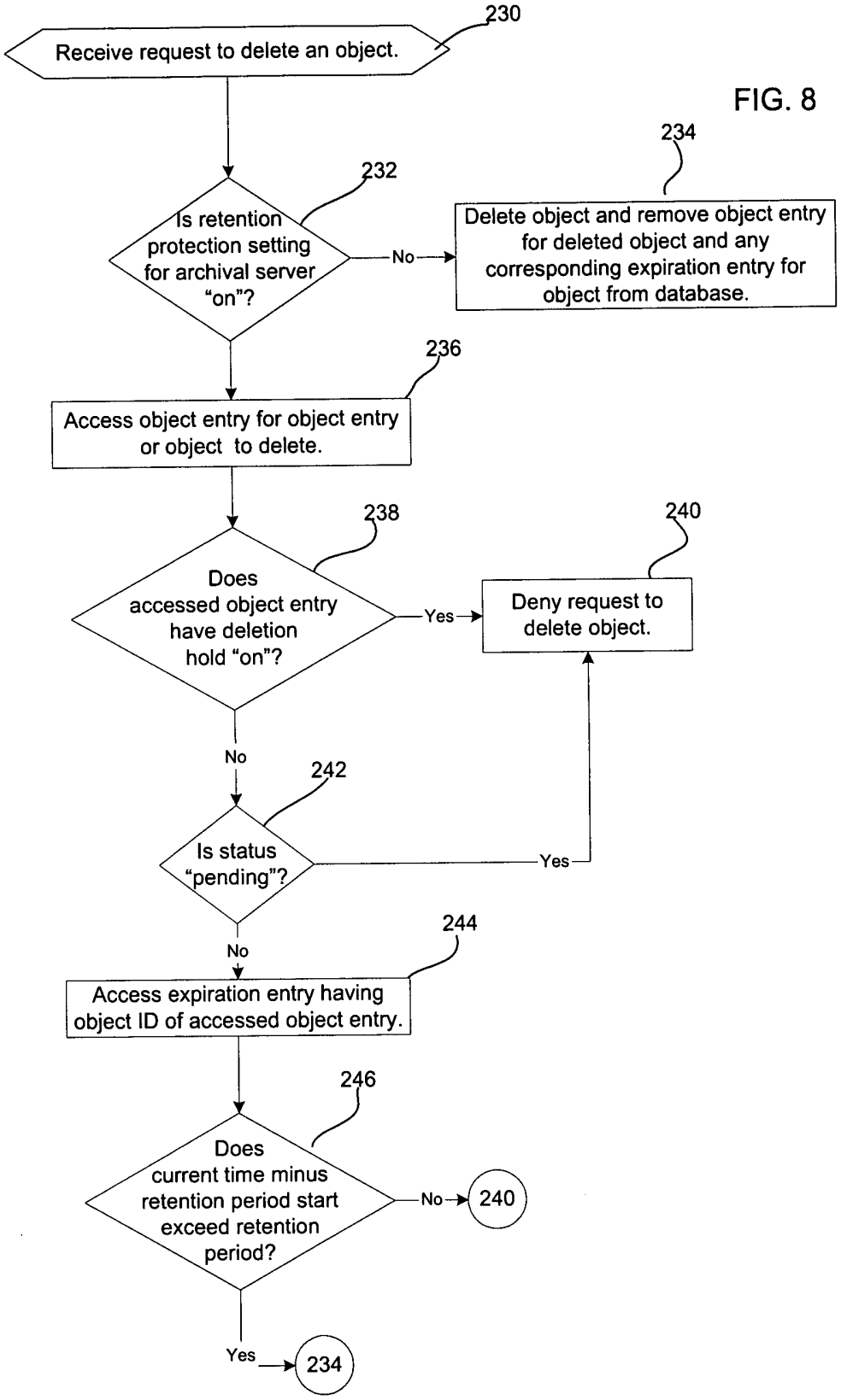
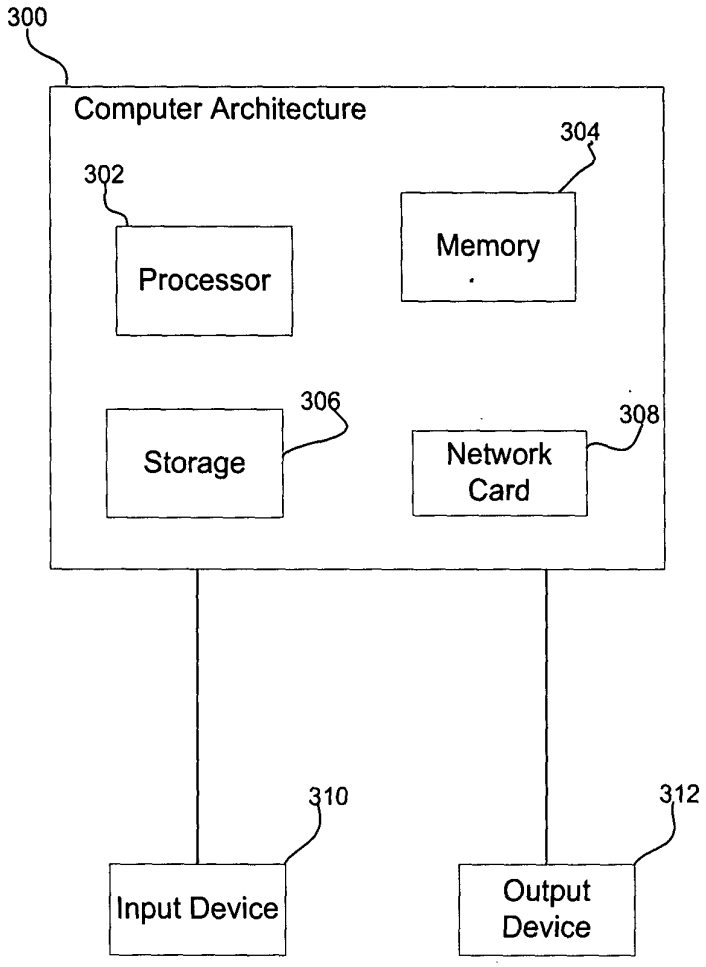

230
Receive request to delete an object.
232
Is retention protection setting for archival server "on"?
No
234
Delete object and remove object entry for deleted object and any corresponding expiration entry for object from database.
236
Access object entry for object entry or object to delete.
238
Does accessed object entry have deletion hold "on"?
Yes
240
Deny request to delete object.
No
242
Is status "pending"?
Yes
No
244
Access expiration entry having object ID of accessed object entry.
246
Does current time minus retention period start exceed retention period?
No
240
Yes
234

FIG. 8

FIG. 9


300
Computer Architecture
304
302
Memory
Processor
306
308
Storage
Network Card
310
312
Input Device
Output Device